If you are using a printed copy of this procedure, and not the on-screen version, then you MUST make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

12.44 Vacuum Pumping MP7 - SF6

Text Pages 2 through 5

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials

Approved: ***Signature on File*** _____
Collider-Accelerator Department Chairman Date

C. Carlson

12.44 Vacuum Pumping MP7 - SF6

1. Purpose

The purpose of this procedure is to define the sequence of activities required to vacuum pump MP-7 after it has been filled with SF6.

2. Responsibilities

It is the responsibility of the person or persons executing this procedure to observe all safety rules.

3. Prerequisites

The person or persons executing this procedure shall have all formal training required of a TVDG Operator.

4. Precautions

None

5. Procedure

5.1 Insure that the Rotating Shafts are OFF.

5.2 Turn Recirculator OFF.

5.3 Turn Hot Water Pump (J- 130) OFF and Close the Hot Water Valve.

5.4 Close HCV-24 and verify that FCV-2 and HCV-28 are Closed.

5.5 Close PCV-1 (Turn PCV-1 Down to 0).

5.6 Close HOV-11, HOV-9 and HOV-15.

5.7 Open HOV-8.

5.8 Open HCV-53 while Pressing HOV-57 and reading Gauge P-1. Gauge P-1 should indicate near 0.

5.9 Verify that HCV-31 is Open.

5.10 Open HCV-2.

5.11 Set PCV-33 to Valve and Manual and Open to about 30.

5.12 Continue pumping with Compressors until there is a 12" Vacuum in the Tank as read on P-1.

5.13 Start Vacuum Pump (J-105). Record Time, Tank Pressure, LE Vac and HE Vac on Pumpout Log Sheet

5.14 Close HCV-30.

5.15 Verify that PCV-33 is on Valve and Manual. Open PCV-33 Slowly while watching Gauge P-1. Adjust PCV-33 to keep the Pressure as read on P-1 at about 0 PSI and Stable.

5.16 Set PCV-33 to Regulate and Seal.

5.17 Align Red Pointer with Black Indicator which should be at or very close to 0.

5.18 Switch PCV-33 to Auto. Now the Vacuum Suction Valve (PCV-33) is being regulated to keep the Vacuum pump output pressure into the Compressors at the set pressure of about 0 PSI.

5.19 Set PCV-33 to Valve. The Red Pointer now indicates how much PCV-33 is open. Gauge P-1 will start to go negative after PCV-33 is fully open.

5.20 When the Vacuum as read on the Gauge directly above the Vacuum Pumps is 22" (P-1 will be about -7" at this point), put PCV-33 in Valve and Manual and Close It to 70.

5.21 Start Blower No. 1. Record Time, Tank Pressure, LE Vac and HE Vac on the Pumpout Log Sheet.

5.22 Verify that PCV-33 is on Valve and Manual. Open PCV-33 Slowly while watching Gauge P-1. Adjust PCV-33 to keep the Pressure as read on P-1 at about 0 PSI and Stable.

5.23 Set PCV-33 to Regulate and Seal.

5.24 Align Red Pointer with Black Indicator which should be at or very close to 0.

5.25 Switch PCV-33 to Auto. Now the Vacuum Suction Valve (PCV-33) is being regulated to keep the Vacuum Pump output pressure into the Compressors at the set pressure of about 0 PSI.

5.26 Set PCV-33 to Valve. The Red Pointer now indicates how much PCV-33 is open. Gauge P-1 will start to go negative after PCV-33 is fully open.

5.27 When P-1 is at 6" of vacuum, Turn One Compressor OFF. PCV-33 may close slightly - wait for it to re-open. Gauge P-1 will start to go negative after PCV-33 is fully open.

5.28 Crack Open HOV-15 and HOV-9 to keep P-1 at about 0 PSI.

5.29 When Blower No. 2 Ready Light comes ON (at a vacuum of about 28"), turn Blower No. 2 ON. Record Time, Tank Pressure, LE Vac and HE Vac on the Pumpout Log Sheet.

5.30 Keep Cracking Open HOV-15 and HOV-9 to keep P-1 at about 0 PSI.

5.31 Continue pumping for 15 minutes after starting Blower No. 2.

5.32 Close HCV-2.

5.33 Turn Vacuum Pumps OFF. Record Time, Tank Pressure, LE Vac and HE Vac on the Pumpout Log Sheet.

5.34 Close HCV-53.

5.35 Close HOV-18 and IMMEDIATELY Open HOV-15 and HOV-9. This puts the Compressors in Bypass.

5.36 Close HOV-9 and when pressure on input to compressor is at 0 then turn off compressor. (To ensure no pressure at bleed valve, verify that compressor input pressure is at 0 psi.)

5.37 Close HOV-6 and HOV-15.(Leave SF6 mix in lines.)

5.38 Open V-45A Vent Valve. Mark Check Sheet indicating Air in the Vacuum Lines.

5.39 After venting is complete, Open HCV-54 to Exhaust.

5.40 Close V-45A and PCV-33.

5.41 Close V-3 and V-5

5.42 Close Water Supply Valves on Compressors.

5.43 Enter Storage Pressure in the Pumpout Log.

5.44 Close Cold Water Valve on SF6 Heat Exchanger (valve with blue handle, overhead to right of Pumping Panel).

5.45 Turn Both Blower Switches OFF.

5.46 Set HOV-48 to Fill.

5.47 Remove V-60 (Valves Locked) Key and Insert it in MP-7 LE Door.

5.48 In the Pit below MP-7:

5.48.1 Close HOV-30. Lock this valve CLOSED. Remove key and insert into the corresponding lock on L.E. Manway Door of MP-7.

5.48.2 Close 4 Hot Water Valves.

5.48.3 Retract Radiation Source and Remove Key. Record Time on Pumpout Log Sheet

5.49 Insert Radiation Source Key in MP-7 LE Door.

5.50 Open Tank Vent Valve (LE End, North Side) to admit air into Tank. Record Time on Pumpout Log Sheet

5.51 When Tank is at atmosphere, Open LE Manway Door. Record Time, LE Vac and HE Vac on Pumpout Log Sheet.

5.52 Close Tank Vent Valve.

5.53 In gas house, CLOSE the three EAST BANK isolation valves.

5.54 Proceed to Tank Opening Instructions C-A-OPM 12.35 "Instructions for Entering MP-7".

6. Documentation

6.1 Complete Pumpout Log Sheet as required by this procedure.

7. References

7.1 C-A-OPM 12.35 "Instructions for Entering MP-7".

8. Attachments

None